

Appl No. 09/812,260
Amdt. dated February 10, 2005
Reply to Office action of January 19, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the method comprising the steps of:
determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel;
transmitting data from the first communication device to at least a second communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first communication device;
determining at a second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling ~~[[a]]~~ the radio frequency channel; and
transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices.
2. (Previously Presented) A method according to claim 1, wherein said method further comprises:
commencing data communication from the first communication device to at least the second communication device using the sub-carrier frequencies, in accordance with the data received from the second communication device.
3. (Previously Presented) A method according to claim 1, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first communication device includes a bitmap.
4. (Previously Presented) A method according to claim 1, wherein said data

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indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices includes a bitmap.

5. (Previously Presented) A method according to claim 1, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first communication device is transmitted redundantly to the second communication device using a plurality of sub-carriers.

6. (Previously Presented) A method according to claim 1, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices is transmitted redundantly to the first communication device using a plurality of sub-carriers.

7. (Previously Presented) A method according to claim 1, wherein said step of determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device, includes spectrum analysis to evaluate energy levels.

8. (Previously Presented) A method according to claim 1, wherein said step of determining at a second communication device sub-carrier frequencies suitable for communication with the second communication device, includes spectrum analysis to evaluate energy levels.

9. (Original) A method according to claim 1, wherein said multi-carrier modulation technique uses sub-carriers which are orthogonal to each other.

10. (Previously Presented) A method according to claim 1, wherein said step of transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices, includes the step of transmitting an acknowledge signal to indicate sub-carrier frequencies suitable for data communication with the

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first and second communication devices.

11. (Currently Amended) A system for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the system comprising:

means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel;

means for transmitting data from the first communication device to at least a second communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first communication device;

means for determining at a second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling ~~[[a]]~~ the radio frequency channel; and

means for transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices.

12. (Previously Presented) A system according to claim 11, wherein said system further comprises:

means for commencing data communication from the first communication device to at least the second communication device using the sub-carrier frequencies, in accordance with the data received from the second communication device.

13. (Previously Presented) A system according to claim 11, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first communication device includes a bitmap.

14. (Previously Presented) A system according to claim 11, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices includes a bitmap.

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15. (Previously Presented) A system according to claim 11, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first communication device is transmitted redundantly to the second communication device using a plurality of sub-carriers.

16. (Previously Presented) A system according to claim 11, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices is transmitted redundantly to the first communication device using a plurality of sub-carriers.

17. (Previously Presented) A system according to claim 11, wherein said means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device, includes means for performing a spectrum analysis to evaluate energy levels.

18. (Previously Presented) A system according to claim 11, wherein said means for determining at a second communication device sub-carrier frequencies suitable for communication with the second communication device, includes means for performing spectrum analysis to evaluate energy levels.

19. (Original) A system according to claim 11, wherein said multi-carrier modulation technique uses sub-carriers which are orthogonal to each other.

20. (Previously Presented) A system according to claim 11, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices is an acknowledge signal.

21. (Currently Amended) A system for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the system comprising:

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a first receiver for receiving communication at a first communication device;
a first signal processor for determining at the first communication device sub-carrier frequencies suitable for communication with the first communication device;
the first receiver and the first processor configured for determining sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel;
a first transmitter for transmitting data from the first communication device to at least a second communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first communication device;
a second receiver for receiving communications at a second communication device;
a second signal processor for determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device;
the second receiver and the second processor configured for determining sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling ~~[[a]] the~~ radio frequency channel; and
a second transmitter for transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices.

22. (Previously Presented) A system according to claim 21, wherein the first transmitter commences data communication from the first communication device to at least the second communication device using the sub-carrier frequencies, in accordance with the data received from the second communication device.

23. (Previously Presented) A system according to claim 21, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first communication device includes a bitmap.

24. (Previously Presented) A system according to claim 21, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first and second

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communication devices includes a bitmap.

25. (Previously Presented) A system according to claim 21, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first communication device is transmitted redundantly to the second communication device using a plurality of sub-carriers.

26. (Previously Presented) A system according to claim 21, wherein said data indicative of sub-carrier frequencies suitable for data communication with the first and second communication devices is transmitted redundantly to the first communication device using a plurality of sub-carriers.

27. (Original) A system according to claim 21, wherein said system further comprises a first spectrum analyzer to evaluate energy levels at the first communication device.

28. (Original) A system according to claim 21, wherein said system further comprises a second spectrum analyzer to evaluate energy levels at the second communication device.

29. (Original) A system according to claim 21, wherein said multi-carrier modulation technique uses sub-carriers which are orthogonal to each other.

30. (Previously Presented) A system according to claim 21, wherein said second transmitter transmits an acknowledge signal to indicate sub-carrier frequencies suitable for data communication with the first and second communication devices.

31. (Previously Presented) A method for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the method comprising the steps of:
determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling

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a radio frequency channel; and

transmitting data from the first communication device to at least a second communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first communication device.

Claims 32-34. (Canceled)

35. (Previously Presented) A method for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the method comprising the steps of:

receiving data at a second communication device, wherein said data is indicative of sub-carrier frequencies suitable for data communication with at least a first communication device;

determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel; and

transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with at least the first and second communication devices.

36. (Previously Presented) A method according to claim 35, wherein said method further comprises:

commencing data communication from the first communication device to at least the second communication device using the sub-carrier frequencies, in accordance with the data received from the second communication device.

37. (Previously Presented) A system for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the system comprising:

means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference

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by sampling a radio frequency channel; and

means for transmitting data from the first communication device to at least a second communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first communication device.

Claims 38 and 39. (Canceled)

40. (Previously Presented) A system for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the system comprising:

means for receiving data at a second communication device, wherein said data is indicative of sub-carrier frequencies suitable for data communication with at least a first communication device;

means for determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel; and

means for transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with at least the first and second communication devices.

41. (Previously Presented) A system according to claim 40, wherein said system further comprises:

means for commencing data communication from the first communication device to at least the second communication device using the sub-carrier frequencies, in accordance with the data received from the second communication device.

42. (Previously Presented) A system for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the system comprising:

a first receiver for receiving communication at a first communication device;

a first signal processor for determining at the first communication device sub-

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carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel; and

a first transmitter for transmitting data from the first communication device to at least a second communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with the first communication device.

43. (Previously Presented) A system according to claim 42, wherein said system further comprises:

a second receiver for receiving communications at a second communication device;

a second signal processor for determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device; and

a second transmitter for transmitting data from the second communication device to at least the first communication device indicative of sub-carrier frequencies suitable for data communication with at least the first and second communication devices.

Claims 44 and 45. (Canceled)

46. (Previously Presented) A system for selecting sub-carrier frequencies for communication between at least two communication devices using a multi-carrier modulation technique with associated sub-carrier frequencies, the system comprising:

a second receiver for receiving communications at a second communication device, wherein said communication includes data indicative of sub-carrier frequencies suitable for data communication with at least a first communication device;

a second signal processor for determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel; and

a second transmitter for transmitting data from the second communication device to at least the first communication device wherein the data is indicative of sub-carrier frequencies suitable for data communication with at least the first and second communication devices.

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Claims 47 - 49. (Canceled)

50. (Previously Presented) The method of claim 31, the determining step further comprising:

converting sampled data to the frequency domain; and

evaluating energy levels of each sub-carrier frequency;

wherein any sub-carrier frequency having an energy level above a predetermined threshold is determined to be an unusable frequency.